

## **REMARKS**

In the Office Action of April 19, 2010, claims 1-22 stand rejected. Claims 1, 2, 6, 11-15, and 17-19 have been amended for consistency and clarity. Claims 7 and 16 have been cancelled. Claims 23 and 24 have been added. The new and amended claims find support throughout the specification, such on page 3, line 6, to page 6 and in the accompanying figures. It is submitted that no new matter has been introduced by the newly added claims.

The present additions and cancellations are made without prejudice or disclaimer to the subject matter of the claims as originally filed. Furthermore, Applicant does not acquiesce or otherwise concede the correctness of the rejections to the original or previously presented claims. Accordingly, Applicant hereby reserves the right to pursue the subject matter of the claims as previously presented or as originally filed in the Subject Application in related applications that may be currently on file or filed at a later date. Moreover, Applicant hereby reserves the right to submit in such related applications arguments made in connection with the Subject Application.

### **A. Rejection of Claims 1-10, 13-19, 21, and 22 under 35 U.S.C. § 103(a)**

Claims 1-10, 13-19, 21, and 22 stand rejected under 35 USC § 103(a) as being obvious over U.S. Patent No. 4,382,552 to Lubsen et al. ("Lubsen") in view of U.S. Patent No. 6,062,493 to Abplanalp et al. ("Abplanalp"). Claims 7 and 16 have been canceled. This rejection is respectfully traversed with respect to pending claims 1-6, 8-10, 13-15, 17-19, 21, and 22.

Claim 1 recites a spray nozzle for spraying a liquid into the atmosphere, comprising a secondary jet connected to means for supplying the liquid, and including means for effecting a first fractionation of the liquid and an expansion chamber in which the liquid that has been submitted to the first fractionation is introduced; a principal jet connected to means for generating gaseous flow, including means for effecting a

second fractionation of the liquid and an outlet orifice to the atmosphere in which fluid which has been submitted to the second fractionation is introduced; and means for connecting the secondary jet to the principal jet, by connecting the expansion chamber and the means for effecting the second fractionation of the liquid, and configured to create a mixed gas-and-liquid fluid. Claim 15 recites similar limitations.

Claim 17 is directed to a method of spraying a liquid into an atmosphere and recites limitations similar to those of claim 1, including effecting a first and second fractionation of a liquid. Claim 17 also recites the application of a gas under pressure that creates a mixed gas-and-liquid.

Lubsen teaches a liquid applicator for dispensing a chemical liquid in dilute aqueous form. The device of Lubsen includes a first Venturi 26 in which water circulates and which forms a first stage aspirator allowing a concentrate stored in a first container 8 to be mixed with the water in the expansion chamber 27, forming therefore a premix. The premix is then stored in a second container 9. Lubsen further teaches a second Venturi 44 in which water circulates and which forms a second stage aspirator allowing the premix stored in the second container 9 to be mixed with the water in the expansion chamber 45, forming therefore the dilute ready to be distributed through a nozzle, such as a garden hose.

The Office asserts Lubsen teaches all aspects of claims 1 and 15, but fails to teach a liquid distribution system that employs gas under pressure. The Office cites Abplanalp as teaching this aspect and submits that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the nozzle of Lubsen with the gas under pressure taught by Abplanalp because the Office asserts that "switching out one fluid for another is known in the art" (Office Action, p. 3, II 1-4). Applicant respectfully disagrees and asserts that the Office has not met its burden of *prima facie* obviousness.

To determine the obviousness of a claim, the Office must make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis

added). Thus, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Furthermore, Applicant submits that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. See MPEP §2141.02(VI).

Lubsen is clearly different from the recitations of independent claims 1 and 15 for at least the reason that claims 1 and 15 recite either: 1) a means for generating a gaseous flow (claim 1); or 2) a means for supplying gas under pressure (claim 15). Because these differences in configuration are clearly structural in nature and Lubsen employs only liquid conduits and Venturis which do not comprise a means for generating a gaseous flow or form any mixed gas-and-liquid composition, claims 1 and 15 are distinct from the teachings of Lubsen. Claim 17 recites similar process limitations and is also distinct from Lubsen.

In particular, Lubsen does not disclose an apparatus that comprises a means for generating a gaseous flow or an apparatus comprising means for effecting a first or a second fractionation of the liquid. Furthermore, Lubsen does not teach an apparatus configured such that the liquid from the first fractionation is mixed with the gas creating therefore a mixed gas-and-liquid which terminates in a low pressure area of an outlet orifice, as recited in the relevant claims. Although "fractionation" is not explicitly defined in the Specification, one of ordinary skill in the art, reading the present Specification in its entirety, would understand that the term "fractionation" is clearly directed to the pulverization of a volume of liquid into fine droplets that permit their dispersion in a homogeneous suspension in a surrounding space as a "dry mist" into contact with a surface in an extremely thin continuous film. (See, translated Specification, pp 2-3). As provided in the Specification, in certain embodiments of the present claims, a first Venturi effects a first fractionation of the liquid composition and is terminated by an expansion chamber. A second Venturi is connected to a gaseous source and is connected to the expansion chamber containing the liquid composition from the first fractionation. This provides for an apparatus that is configured to create a mixed gas-and-liquid fluid which is in the same time submitted to the Venturi effect so

that a second fractionation step is conducted.

The teachings of Abplanalp cannot be combined to render obvious independent claims 1-6, 8-10, 13-15, 17-19, 21, and 22, as asserted by the Office. Initially, Applicant notes that the Office's conclusion of obviousness is based on improper hindsight reasoning. Applicant recognizes that any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper. MPEP § 2145.X.a. However, in this instance, the Office clearly uses knowledge gleaned from Applicant's disclosure because the Lubsen apparatus would not be modified in a manner suggested by the Office.

In this regard, there is clearly no motivation to modify the liquid applicator employed by Lubsen to a mixed gas-and-liquid composition, such as disclosed in Abplanalp, because such a modification would destroy a clearly stated "major" objective of Lubsen. For example, Luben clearly teaches at col. 1, lines 21-25:

It is accordingly a major object of the present invention to provide a liquid applicator for dispensing a chemical in dilute aqueous form which provides accurate high dilution ratios without premixing by the operator." (emphasis added).

Accordingly, adding a means for generating a gaseous flow to the Lubsen apparatus would destroy a clearly stated objective of Lubsen to provide a liquid applicator for dispensing a chemical in dilute aqueous form. Applicant disagrees with the Office's conclusory statement that switching out one fluid for another is known in the art and could be applied to the teachings of Lubsen, because when Lubsen is read in its entirety, there would be no motivation for one of skill in the art to combine a means for generating a gaseous flow or gas under pressure with the liquid dispensing apparatus of Lubsen to create a mixed gas-and-liquid stream gas. Lubsen teaches at col. 1, lines 8-20 that a significant problem of conventional hose end sprayers is to accurately dilute

concentrated garden chemicals with water at very high dilution rates for correct liquid chemical applications. Adding a gas under pressure to the liquid chemical stream of Lubsen would significantly disrupt the ability of one of ordinary skill in the art to properly measure and meter the very low dilution rates desired by Lubsen. Indeed, it is respectfully submitted that the Lubsen apparatus may be rendered inoperable or, at the very least, unfit for its intended purpose if one of ordinary skill in the art added a stream of gas under pressure to the Lubsen liquid dispenser.

As stated in MPEP § 2143.01.V, if a "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." Likewise, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." MPEP § 2143.01.VI, citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Applicant respectfully submits that modification of Lubsen in a manner suggested by the Office would render Lubsen unfit for its intended purpose and would necessarily change its principle of operation.

Accordingly, it is respectfully submitted that the teachings of Lubsen, when read as a whole, clearly provide stated objectives and teachings that limit the use of the liquid diluting and dispensing apparatus when read by one of ordinary skill in the art. Such objectives would clearly not motivate one of ordinary skill in the art to alter the Lubsen liquid dispensing apparatus to incorporate means for supplying gas under pressure, means for generating a gaseous flow, or a means for effecting fractionation, as recited in independent claims 1 and 15, or similar limitations recited in claim 17.

Appellant respectfully submits that the Office's asserted reasons for modifying the cited references are merely conclusory statements and do not possess a rational underpinning to support a legal conclusion of obviousness. See *Ex Parte Linzer*, Appeal 2009-001858, \*6 (BPAI May 28, 2010) (citing *In re Kahn*, 441 F.3d 977, 998 (Fed. Cir. 2006), quoted in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

Rather, combining the teachings of Lubsen and Abplanalp to render obvious claims 1-6, 8-10, 13-15, 17-19, 21, and 22 would be based on impermissible hindsight because the knowledge of fractionation of a liquid into a mixed gas-and-liquid fluid in a manner recited in the claims would be gleaned from Applicant's disclosure, not Lubsen as evidenced by Abplanalp.

Indeed, the Office only cites Abplanalp for teaching the use of gas under pressure, but does not overcome the shortcomings of Lubsen. Accordingly, the teachings of Lubsen and Abplanalp are not properly combinable to render obvious independent claims 1, 15, 17 and the combination does not establish a *prima facie* case of obviousness. Because dependent claims 2-6, 8-10, 12-15, 18-19, 21, and 22 depend either directly or indirectly from claims 1, 15, or 17, all claims 1-6, 8-10, 13-15, 17-19, 21, and 22 are believed to be patentable at least for depending from an allowable independent claim.

Accordingly, withdrawal of the rejection of claims 1-6, 8-10, 13-15, 17-19, 21, and 22 in view of the teachings of Lubsen and Abplanalp is respectfully requested.

**B. Rejection of Claims 11 and 12 under 35 U.S.C. § 103(a)**

Claims 11 and 12 stand rejected under 35 USC § 103(a) as being obvious over Lubsen in view of Abplanalp and further in view of FR 2,487,782 to Wanson et al. ("Wanson"). This rejection is respectfully traversed.

Wanson is only cited for its teaching a third fractionation of the liquid. For the reasons provided above in *Section A*, the combined teachings of Lubsen and Abplanalp are clearly distinct from the recitation of independent claim 1, from which claims 11 and 12 depend. Accordingly, claims 11 and 12, which further define embodiments of the invention, are believed to be patentable at least for depending from an allowable independent claim.

Accordingly, withdrawal of the rejection to claims 11 and 12 under 35 USC § 103(a) as being obvious over the combined teachings of Lubsen, Abplanalp, and

Wanson is respectfully requested.

**C. Rejection of Claim 20 under 35 U.S.C. § 103(a)**

Claim 20 stands rejected under 35 USC § 103(a) as being obvious over Lubsen in view of Abplanalp as applied to claims 1-10, 13-19, 21, and 22 and further in view of Wanson. This rejection is respectfully traversed.

Wanson is only cited for its teaching of a means for affecting a third fractionation of the liquid. For the reasons provided above in *Section A*, the combined teachings of Lubsen and Abplanalp are clearly distinct from the recitation of independent claim 17, from which claim 20 depends. Accordingly, claim 20, which further defines an embodiment of the invention, is believed to be patentable at least for depending from an allowable independent claim.

Accordingly, withdrawal of the rejection to claim 20 under 35 USC § 103(a) as being obvious over the combined teachings of Lubsen, Abplanalp, and Wanson is respectfully requested.

**D. New Claims 23 and 24**

New Claims 23-24 have been added and find support throughout the Specification and figures, such as at page 3, line 6 to the bottom of page 6 of the translated document.

For at least the reasons provided above in *Section A*, new claims 23 and 24 are believed to be patentable in view of the cited references.

### **CONCLUSION**

Applicant respectfully submits that claims 1-6, 8-15, and 17-24 recite a novel and non-obvious nozzle, apparatus, or method for spraying a liquid into the atmosphere. Applicant believes that these claims define over the prior art of record and are in proper form for allowance. Accordingly, allowance of all claims 1-6, 8-15, and 17-24 at an early date is earnestly solicited.

Applicant does not otherwise concede, however, the correctness of the rejections with respect to any of the newly added dependent claims not discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references based on additional features contained in the dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the differences in the claims discussed herein.

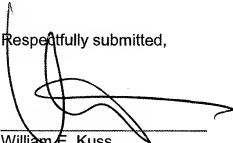
Applicant submits that the Commissioner is hereby authorized to charge any additionally required fees deemed necessary for consideration of this Response to Account No. 11-1110.

Applicant's present Response should not be taken as acquiescence to any of the specific rejections, assertions, statements, etc., presented in the Office Action that Applicant has not explicitly addressed herein. Applicant reserves the right to specifically address all such rejections, assertions, and statements in continuing applications, subsequent responses, and/or appeal or pre-appeal proceedings.



If the undersigned can be of assistance to the Examiner in addressing any additional issues to advance the application to allowance, please contact the undersigned at the number set forth below.

Jan 12, 2011  
Date

Respectfully submitted,  
  
\_\_\_\_\_  
William E. Kuss  
Registration No. 41,919

K&L GATES LLP  
K&L Gates Center  
210 Sixth Avenue  
Pittsburgh, Pennsylvania 15222-2613

Tel: (412) 355-6323